

REMARKS

Claims 1-14 are all the claims pending in the application. Claims 4, 5 and 8-14 are withdrawn as non-elected claims pursuant to the Restriction Requirement mailed April 3, 2009. Applicants reserve the right to file a Divisional Application directed to non-elected claims.

I. Claim Rejections - 35 U.S.C. § 112

Claims 3, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner asserts that “pressure taps” recited in claim 3 are not defined in the specification.

A person of ordinary skill in the art would readily understand from the specification that the “pressure taps” are the ports in the pipes where pressure is measured. According to claim 3, the pressure taps are located upstream of the injectors (2, 3) (see FIG. 1). The transducer is a differential transducer and, as shown in FIG. 1, the two ports of the transducer are connected to two ports/taps located upstream of the injectors (2, 3). The connection of the transducer to the mixing chamber is disclosed in FIG. 1, where the differential transducer (5) is connected through two pipes to two ports upstream of the injectors 2 and 3. Thus, the pressure taps are located between the two jet pulsating devices (6) and the injectors (2, 3).

Accordingly, Applicants respectfully submit that it should be clear to a person of ordinary skill in the art as to what a pressure tap is and where the pressure taps are located. Thus, Applicants request the Examiner to withdraw this rejection.

II. Claim Rejections - 35 U.S.C. §103

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Begemann et al. (US 2004/0130049) or Soechtic (US 4,944,599) in view of Hagen et al. (US 2005/0056313). Applicants respectfully traverse the rejections based on the following comments.

Claim 1, as amended, recites:

Production process for parts by Reaction Injection Moulding, characterized in that it is performed a dynamic pressure measurement, for the determination of a pulsation - both in frequency and in amplitude - to which the mixing and reaction pulsation regime is subjected to, and subsequently is detected a flow regime within the mixing and reaction chamber,

wherein the performing the dynamic pressure measurement includes measuring the frequency of a pressure signal obtained from the dynamic pressure measurement, such that the frequency is a function of mixing dynamics.

The Examiner correctly concedes that Begemann and Soechtic do not disclose using pulsation, frequency, and amplitude to detect flow patterns and for improving fluid mixing.

With respect to Begemann, Begemann discloses using the pressure history as a means of assessing if the process is going as expected (Abstract and paragraphs 27-28). For example, Begemann discloses using the pressure history during the mould filling and comparing it to a previous curve. However, Begemann does not disclose or suggest the usage of the pressure dynamics to control the moulding process. That is, the pressure signal is not analyzed on the frequency domain to control the moulding process, and thus, Begemann does not disclose a

dynamic pressure measurement for the determination of a pulsation, both in frequency and amplitude, for detecting a flow regime according thereto, as recited in claim 1.

With respect to Hagen, Hagen teaches the dynamic measure of the differential pressure to control a reactor. However, the dynamic registering of the differential pressure, alone, does not teach or suggest the use of a characteristic of that pressure, a typical frequency, related to the mixing. Applicants respectfully submit that Hagen does not teach or suggest using the frequency of the dynamic pressure measurement (i.e., the frequency of a pressure signal measured) to set the frequency and amplitude of the stimulus.

For example, the pressure modulation referred to in Hagen is not a function of the mixing dynamics but instead is an imposition to the system from an external stimulus (paragraphs 1058-1064). In the case of the claims of the present application, however, the pressure frequency is a function of the mixing dynamics that permits an assessment of the mixing during the process. The imposition of an external stimulus to enhance mixing is not equivalent to the use of the frequency of a pressure signal, measured in a reactor and derived from the mixing dynamics, to set the frequency and amplitude of the stimulus, and thus, is not taught or suggested by the disclosure of Hagen.

Both Begemann and Hagen teach the dynamic measuring of the pressure to control a reactor, but neither teaches the use of the frequency of the pressure signal from the reactor to assess mixing or to set the parameters of a stimulus of the mixing. Thus, Begemann, alone or in combination with Hagen, fails to teach or suggest that “the performing the dynamic pressure measurement includes measuring the frequency of a pressure signal obtained from the dynamic

pressure measurement, such that the frequency is a function of mixing dynamics,” as recited in claim 1.

Applicants submit that although Soechtig teaches the measure of the differential pressure, Soechtig does not teach or suggest the relations between mixing and pressure frequencies. In particular, Soechtig does not teach that a pressure signal is analyzed on the frequency domain to control the moulding process. That is, Soechtig does not teach the use of the frequency of a pressure signal, measured in a reactor and derived from the mixing dynamics, to set the frequency and amplitude of the stimulus. Therefore, Soechtig, alone or in combination with Hagen, fails to teach or suggest that “the performing the dynamic pressure measurement includes measuring the frequency of a pressure signal obtained from the dynamic pressure measurement, such that the frequency is a function of mixing dynamics,” as recited in claim 1.

Accordingly, Applicants submit that claim 1 is patentable for at least the above reasons. In addition, Applicants submit that dependent claims 2, 3, 6 and 7 are patentable at least by virtue of their respective dependencies.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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